

What is Claimed is:

1. An apparatus for the loading and launching of pellets used in tube cleaning comprising:
 - a block having a cylindrical vertical passageway therethrough;
 - a horizontal passageway along the center axis of said block and intersecting said vertical passageway at a right angle;
 - a valve port located along the vertical axis of the vertical passageway and below the horizontal passageway of said block;
 - a valve attached to said valve port for delivering compressed air on demand;
 - a pneumatic actuator within said horizontal passageway;
 - a cylindrical shuttle attached to said actuator and having the ability to freely move along said horizontal shuttle to a retracted and extended position;
 - a pin attached perpendicular to the opposite end of said shuttle;
 - a lower block attached to said block by bolts having a cylindrical vertical passageway therethrough which aligns with the vertical passageway of said block;
 - a lower fitting attached to vertical passageway of the lower block;
 - a spring loaded release lever affixed to said block having a pin which extends through slots located on opposite sides of said block;
 - an axle affixing said spring loaded release lever to said block and said release lever straddling the block and having a projection that extends through a hole intersecting the vertical passageway of the block.

2. A device for automatically loading and firing foam pellets as recited in claim 1 wherein said cylindrical shuttle further comprising:

a hole at the opposite end of said shuttle that is larger than and in alignment with the vertical passageway of the block when said shuttle is extended;

a pin attached perpendicular to and on the opposite end of said shuttle that extends through horizontal slots of the block; and

an air threshold sensor attached to the end of said shuttle to open the piloted valve when the shuttle is fully forward.

3. A device for automatically loading and firing foam pellets as recited in claim 1 wherein said pneumatic actuator includes a means for retracting and extending said cylindrical shuttle in the horizontal passageway of said block and means to contact said release lever.

4. A device for automatically loading and firing foam pellets as recited in claim 1 wherein said spring loaded release lever includes a means for releasing and restricting the movement of foam pellets in said block.

5. A device for loading and firing foam pellet as recited in claim 4 wherein said spring loaded release lever further comprising:

a pin which projects through a small hole intersecting the vertical passageway of said block;

said pin forcibly contacts the foam pellets in the vertical passageway of said block

6. An apparatus for feeding pellets used in tube cleaning comprising:
 - a cylinder having a floor and a removable top;
 - a first tube exiting through the cylinder floor;
 - a second tube located within said first tube;
 - a cylinder end cap around the circumference of said second tube and engaged with said cylinder floor; and
 - a piston encircling said first tube and said second tube resting on said piston.
7. The apparatus as recited in claim 6 wherein said cylinder floor has a plurality of ports around its periphery allowing high pressure air to enter the cylinder.
8. The apparatus as recited in claim 7 wherein said first tube is located along the center axis of said cylinder.
9. The apparatus as recited in claim 8 wherein one of said plurality of ports communicates the increase in air pressure in said cylinder to the piston causing it to push said second tube along said first tube whereby a jammed pellet is repositioned in said first tube.
10. The apparatus as recited in claim 9 wherein said second tube has top and bottom ends and whereby said top end has an opening cut at a 45 degree angle.
11. A method of loading cleaning pellets used in a tube cleaning process and correcting said pellet alignment comprising the steps of:
 - (a) introducing said pellets in a cylinder;

- (b) providing a first and second tube and whereby said first tube is deposited in said cylinder;
- (c) attaching a piston to said second tube and encircling said first tube; and
- (d) introducing a jet stream into said cylinder and allowing said pellets to exit through said first tube.

12. The method as recited in claim 11 wherein said cylinder further comprises a removable top and a floor.

13. The method as recited in claim 12 wherein said cylinder floor has a plurality of ports around its periphery allowing said jet stream to enter the cylinder.

14. The method as recited in claim 13 wherein said first tube is located along the center axis of said cylinder and exits through the cylinder floor.

15. The method as recited in claim 14 wherein said second tube has top and bottom ends and whereby said top end has an opening cut at a 45 degree angle.

16. The method as recited in claim 15 wherein one of said plurality of ports communicates the increase in air pressure in said cylinder to the piston causing it to push said second tube along said first tube whereby a jammed pellet is repositioned in said first tube.

17. An apparatus for the retrieval and inspection of a spent pellet used in tube cleaning comprising:

- a transfer tube comprising a first end and a second end;
- said first end connected to said tube; and
- a chamber comprising an input opening, output opening and an exit opening;

said input opening attached to said second end of said transfer tube; wherein when said spent pellet enters said first end of said transfer tube under air-pressure from said tube, said spent pellet is transferred to said chamber through said input opening of said chamber; wherein said spent pellet exits said output opening of said chamber when said air-pressure is removed.

18. The apparatus of claim 17, wherein said transfer tube further comprises a fitting connected to said first end of said transfer tube and said tube.
19. The apparatus of claim 18, wherein said fitting comprises a bell fitting.
20. The apparatus of claim 17, wherein said chamber comprises a slide valve.
21. The apparatus of claim 20, wherein when said spent pellet enter into said chamber and said air pressure moves said slide valve to a first position trapping said pellet and allowing said air pressure to pass through said exit opening.
22. The apparatus of claim 17, wherein said chamber comprises a collection chamber.
23. The apparatus of claim 17, wherein said chamber further comprises a pass through muffler connected to said exit opening of said chamber.
24. The apparatus of claim 17, wherein said spent pellet comprises a foam pellet.
25. The apparatus of claim 17, wherein said spent pellet comprises a polyurethane foam pellet.
26. A method of retrieving spent cleaning pellets used in a tube cleaning process comprising the steps of:
 - (a) introducing said pellets via a jet stream into one end of said tube;

- (b) attaching a fitting over the other end of said tube allowing said pellets to pass to a transfer tube;
- (c) providing a slide valve in a chamber attached to said transfer tube and collecting said pellets; and
- (d) stopping said jet stream and allowing said pellets to exit said chamber.